National Institute of Environmental Health Sciences

# Probabilistic cost-benefit analysis of disaster risk management in a development context

**Author(s):** Kull D, Mechler R, Hochrainer-Stigler S
**Year:** 2013
**Journal:** Disasters. 37 (3): 374-400

**Abstract:**

Limited studies have shown that disaster risk management (DRM) can be cost-efficient in a development context. Cost-benefit analysis (CBA) is an evaluation tool to analyse economic efficiency. This research introduces quantitative, stochastic CBA frameworks and applies them in case studies of flood and drought risk reduction in India and Pakistan, while also incorporating projected climate change impacts. DRM interventions are shown to be economically efficient, with integrated approaches more cost-effective and robust than singular interventions. The paper highlights that CBA can be a useful tool if certain issues are considered properly, including: complexities in estimating risk; data dependency of results; negative effects of interventions; and distributional aspects. The design and process of CBA must take into account specific objectives, available information, resources, and the perceptions and needs of stakeholders as transparently as possible. Intervention design and uncertainties should be qualified through dialogue, indicating that process is as important as numerical results.

**Source:** http://dx.doi.org/10.1111/disa.12002

## Resource Description

**Climate Scenario :**

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

**Special Report on Emissions Scenarios (SRES) Scenario:** SRES A2, SRES B1

**Early Warning System:**

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

**Exposure :**

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Security

**Extreme Weather Event:** Drought, Flooding

**Food/Water Security:** Agricultural Productivity

**Geographic Feature:**

resource focuses on specific type of geography

Urban

**Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Asia

**Asian Region/Country:** India, Other Asian Country

**Other Asian Country:** Pakistan

**Health Impact:**

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

**Intervention:**

strategy to prepare for or reduce the impact of climate change on health

A focus of content

**Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

**Model/Methodology:**

type of model used or methodology development is a focus of resource

Cost/Economic, Exposure Change Prediction

**Resource Type:**

format or standard characteristic of resource

Research Article

**Timescale:**

time period studied

Medium-Term (10-50 years)